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RELATIONSHIP OF WATER QUALITY PROGRAMS TO A TOTAL STATE PROGRAM OF WATER RESOURCES ADMINISTRATION: THE FEDERAL LEVEL

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Presented for Dr. McCallum by
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Interstate Conference on Water Problems
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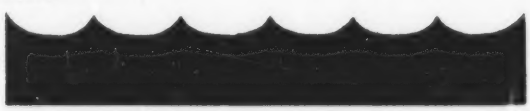

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16. Abstracts The development of federal interest and activities in water pollution control is reviewed in this speech. It is suggested that since so much outdoor recreation is water-oriented, recreation must be considered coexistent with industrial, municipal, and agricultural water uses. Various budget allocations are mentioned, and it is hoped that the increasing federal activity in water pollution control will point the way toward stronger and more uniform appropriations for water quality management at the state level.

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RELATIONSHIP OF WATER QUALITY PROGRAMS TO A TOTAL STATE PROGRAM OF WATER RESOURCES ADMINISTRATION: THE FEDERAL LEVEL

A few days ago I saw a press release referring to the recently created Bureau of Outdoor Recreation as "the first new conservation organization in the Federal Government since the 1930's." I hasten to take issue with that statement. I feel sure our conservationist friends who fought long and hard for its establishment in 1956 feel that the Federal water pollution control program is in all senses also a conservation organization.

When the program was created, Congress was very cognizant that water quality management cuts across all uses of the water resource. The Act directs that we conserve waters for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, and agricultural, industrial, and other legitimate uses." Further, it specifies that we shall do this in cooperation with other Federal agencies, with State water pollution control agencies and interstate agencies, and with municipalities and industries.

Unlike most Federal water development programs, pollution control historically has been a program of State responsibility, and the Federal Act so designates it. At the same time, however, the Act has devised for the Federal Government a role of leadership and guidance whereby it provides technical, legal, and financial assistance to the States, and through the States, to local government. Thus, water quality management today has evolved as a shared responsibility among Federal, State, and local governments.

The development of State water pollution control legislation reflects increasing recognition of the need to provide -- as does the Federal legislation -- for pollution control on a broad, comprehensive basis to protect all beneficial water uses. Thirty-five States have now written into their statutes this modern comprehensive approach.

Traditionally, State water pollution legislation developed as a protective measure for public health, and most of the early programs were vested in the State health department. In conjunction, there was piecemeal lodging of authority in several other

departments of State government which also had interests in water pollution -- such as those dealing with agriculture, fish and wildlife, and mines and minerals.

The present distribution of authority for water pollution control activities among the 50 States groups itself into three categories: (1) the State health agency, 20 States; (2) a specific agency created by statute and placed organizationally within the State health agency,10 States; and (3) an independent agency, established outside the State health agency, 20 States. This is not to say that other State government agencies do not still maintain interests and varying responsibilities in water quality management. The same is true in Federal government.

Often we refer to the Departments of Defense, Interior, Agriculture, and Health, Education, and Welfare as "The Big Four" in Federal water programs. Within the first three are located the construction agencies -- those concerned with water quantity -- the Corps of Engineers, the Bureau of Reclamation, and the Soil Conservation Service. Within the Department of Health, Education, and Welfare -- is the Public Health Service and its Division of Water Supply and Pollution Control, concerned with water quality.

For five years now we have worked closely with the Federal construction agencies under the Water Supply Act of 1958, which made it possible for State and local interests to participate in developing municipal and industrial water supplies in Federal reservoirs. By interagency agreement, the Public Health Service estimates for the Corps of Engineers and the Bureau of Reclamation the need for and the value of storage which may be provided in the reservoirs for these water supply purposes.

Tying in closely with that activity, we now are required to provide advice on the need for and the value of water storage for downstream water quality control. In the 1961 amendments to the Water Pollution Control Act, Congress gave legislative sanction to this principle of streamflow regulation for purposes of water quality control. Our reports must be included in reports to the Congress by the construction agencies on all reservoirs providing such storage. Costs for the water quality control feature are to be allocated in a manner that will insure

that all purposes share equitably in the benefits. A significant provision of this legislation is that if the benefits are widespread or national in scope, the costs of water quality control incorporated in any Federal reservoir are non-reimbursable.

It is logical that we should turn to dilution by streamflow regulation as a second line of defense in protecting water quality. The law makes it clear, however, that flow regulation is in no way to substitute for the first line of defense, which is excluding wastes at their source or treating them before they are discharged to a stream.

We have to date prepared 151 of the reports projecting the benefits of storage for water supply and quality control in Federal reservoirs, and we have 80 others in progress or scheduled -- an indication of the rapidity with which Uncle Sam is building impoundments. We estimate the municipal-industrial water supply benefits in projects we have evaluated to date to be $31.5 million per year, while the water quality control benefits will total $11.5 million annually.

To illustrate the type of study we do on the Federal reservoirs, let us look at a single Corps of Engineers project -- the DeGray Reservoir -- under construction on the Caddo River, tributary of the Ouachita in west-central Arkansas. The Corps originally planned this reservoir primarily for flood control and hydro power -- total capacity 881,900 acre feet. Based on a water yield of 170 mgd (for the two purposes which we analyze) our PHS analysts came up with a figure of $552,000 representing projected annual benefits from water supply storage in the reservoir, and $357,000 as projected annual benefits from water stored for flow regulation or water quality control. This totals $909,000 in yearly benefits to water users below the dam for these two purposes. It stands to reason, of course, that other uses -- such as recreation, fish and wildlife, and esthetic enjoyment of the water -- would involuntarily benefit.

In addition to eight municipalities downstream in Arkansas and Louisiana, whose water demands would be markedly affected by the DeGray impoundments, there are three principal water-using industries in the basin which stand to benefit: alumina reduction, pulp and paper production, and petroleum, petrochemical and chemical products manufacture. The expansions

projected for these industries by our PHS analysts can occur only if sufficient water is provided by the DeGray reservoir to meet their water requirements and to assure that resulting wastes can be assimilated without decreasing water quality to unacceptable levels. Concurrently, population in the area involved is predicted in the PHS studies to increase almost twofold -- from 430,000 in 1960 to 774,000 in the year 2010.

The Senate Select Committee in 1961 made a 20-year cost estimate of $54 billion for water quality control, including facilities for both waste treatment and for stream flow regulation. Water quality management does indeed cost money. But more people need to be made aware that there are, at the same time, economic benefits associated with the improved waters. Unfortunately, these benefits are often not apparent to the public because they constitute insurance for future as well as immediate usefulness.

Conversely, water pollution, too, costs money. It costs the individual, the businessman, the community, the Nation. Some of the damages are directly felt by the added dollars we must pay for construction, operation and maintenance of water treatment facilities. But the bulk of pollution damages and costs cannot be directly tabulated. How, for example, is the impairment to health measured in economic dollars? How do we price out the loss of recreational facilities, depreciated property values, or the failure of industry to expand?

Until recently, water pollution control was a field occupied almost exclusively by attorneys and engineers -- the attorneys to prosecute the transgressor and the engineer to build the remedial works. It takes more than this to understand and manage water quality today. We need the skills of many scientific, political, social and economic disciplines. In 1958 we employed the first economist in the Federal water pollution control program. Today, we are significantly adding to our manpower in these new areas of need. Refined standards for the measurement of the dollar-damages suffered from polluted water and the costs for its control have yet to be fully developed, but they are not beyond the reach of comparative economic studies -- and we <u>are</u> making progress.

In the recent many-volumed report of the Outdoor Recreation Resources Committee, we see a definite tie-in of economic evaluation of water uses with recreation and the fish and wildlife resources.

People want water to swim and to fish in, to ski across, to dive under, to run their boats over -- or simply to sit or walk beside. Swimming is one of the most popular outdoor activities and is headed for the top of the list. Boating and fishing are among the top ten activities. More than 8 million pleasure boats -- a threefold increase in a decade -- are in use in the United States. They represent a better than $2 billion gross in the annual economy. Thirty million sport fishermen in the Nation spend close to $4 billion a year on their pastime -- an increase in just five years of 5 million fishermen and $1 billion in what they spend. The swimming pool business accounts for another $1 billion or so a year in the Nation's economy.

Inevitably, because so much of our outdoor recreation is water-oriented, recreation must be considered coexistent with industrial, municipal, and agricultural water uses. This imposes upon us the responsibility of maintaining water as a safe, enjoyable and healthful environment for our people. To my mind this is an altogether legitimate and very important water use, helping preserve the public health in the best and broadest sense of the word.

Since 1914 the Public Health Service has published -- and revised from time to time as needs dictated -- a list of recommended drinking water standards -- that is, minimum requirements to protect the health of individuals and communities. The revision -- the first since 1946 -- was made last year. It clearly indicated the great effect of our changing environment on public water supplies. For the first time, limits were set on radioactive substances and some of the new synthetic chemicals now found in sources of drinking water.

In the final analysis, it seems hardly enough to establish permissible concentrations of residue substances not removed in the water treatment. The better answer would seem to be to keep source waters as free from pollution as possible.

City Dept Note

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We in the Public Health Service are looking forward to the opening of two national water quality standards laboratories in Duluth, Minnesota and Kingston, Rhode Island. Congress appropriated $4 million last year to establish these institutions. They will develop standards of water quality for all uses -- health, the protection of aquatic life and wildlife, utilization by industry and agriculture, water for recreation, and water for domestic and public drinking supplies. The Duluth establishment will work entirely with fresh water uses, the Kingston one with salt water.

These laboratories and other research facilities now under development will be of immense value and importance, but we cannot wait until the research results are in. We must continue with the business of proper water quality management in all its phases: conducting enforcement actions; constructing waste treatment facilities; building necessary impoundments; and formulating comprehensive river basin plans.

Water resource development, encompassing all sectors of society, today involves expenditures of about $10 billion a year in the United States.

Our cities are spending something over $600 million on sewage treatment facilities to control pollution. We hope for the day when industry will be spending at least as much.

Some 200 State agencies in the water resource field are presently operating on budgets approaching $79 million. This figure includes the State water pollution control budgets, which for the first time in FY 1963, reached the $10 million level. This represented an increase from $4.2 million in FY 1956, the year before the Federal water pollution control program began subsidizing the State programs. The gradual rise in State funding has been stimulated, no doubt, by the Federal grants to State programs which in FY 1962 were increased from $3 million to $5 million a year.

By comparison, the Federal budget for water pollution control now stands at about $120 million a year, which is a clear indication that Congress intends for us to do an all-out effective job in water quality management.

Lack of adequate budgets and programs in some of our States stands as a weak link, however, not only in water quality management, but in the total water resource development picture. Both the Federal and the complex of municipal functions require a strong State program as an essential middle link.

We can only hope that the increasing Federal activity in water pollution control will point the way toward stronger and more uniform appropriations for water quality management at the State level.